

NODE=B180

 $\Xi_b(6227)^-$ $J^P = ?^?$

Status: ***

 $\Xi_b(6227)^-$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
6227.9 ± 0.9 OUR AVERAGE	[6226.9 ± 2.0 MeV OUR 2020 AVERAGE]		
$6227.9 \pm 0.9 \pm 0.2$	¹ AAIJ	21 LHCb $p\bar{p}$ at 7, 8, 13 TeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$6226.9 \pm 2.0 \pm 0.4$	^{2,3} AAIJ	18H LHCb Repl. by AAIJ 2021	
¹ AAIJ 21 measures $m(\Xi_b(6227)^-) - m(\Lambda_b^0) = 608.3 \pm 0.8 \pm 0.4$ MeV. We have adjusted the measurement to our best value of $m(\Lambda_b^0) = 5619.60 \pm 0.17$ MeV. Our first error is their experiment's error and our second error is the systematic error from using our best values.			NODE=B180M;LINKAGE=C
² Uses $\Lambda_b^0 K^-$ and $\Xi_b^0 \pi^-$ modes.			
³ Measures mass difference $m(\Xi_b(6227)^-) - m(\Lambda_b^0) = 607.3 \pm 2.0 \pm 0.3$ MeV and uses $m(\Lambda_b^0) = 5619.58 \pm 0.17$ MeV.			NODE=B180M;LINKAGE=A NODE=B180M;LINKAGE=B

 $\Xi_b(6227)^-$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
19.9 ± 2.6 OUR AVERAGE	[18 ± 6 MeV OUR 2020 AVERAGE]		
$19.9 \pm 2.1 \pm 1.5$	¹ AAIJ	21 LHCb $p\bar{p}$ at 7, 8, 13 TeV	
• • • We do not use the following data for averages, fits, limits, etc. • • •			
$18.1 \pm 5.4 \pm 1.8$	² AAIJ	18H LHCb Repl. by AAIJ 2021	
¹ Uses $\Lambda_b^0 K^-$ decays.			NODE=B180W;LINKAGE=B
² Uses $\Lambda_b^0 K^-$ and $\Xi_b^0 \pi^-$ modes.			NODE=B180W;LINKAGE=A

 $\Xi_b(6227)^-$ DECAY MODES

Mode	Fraction (Γ_i/Γ)	Scale factor
$\Gamma_1 \quad \Lambda_b^0 K^- \times B(b \rightarrow \Xi_b(6227)) / B(b \rightarrow \Lambda_b^0)$	$(3.20 \pm 0.35) \times 10^{-3}$	
$\Gamma_2 \quad \Xi_b^0 \pi^- \times B(b \rightarrow \Xi_b(6227)) / B(b \rightarrow \Xi_b^0)$	$(2.8 \pm 1.1) \%$	1.8

 $\Xi_b(6227)^-$ BRANCHING RATIOS

$$\Gamma(\Lambda_b^0 K^- \times B(b \rightarrow \Xi_b(6227)) / B(b \rightarrow \Lambda_b^0)) / \Gamma_{\text{total}} \quad \Gamma_1 / \Gamma$$

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
3.20 ± 0.35 OUR AVERAGE			
$3.0 \pm 0.3 \pm 0.4$	AAIJ	18H LHCb $p\bar{p}$ at 7, 8 TeV	
$3.4 \pm 0.3 \pm 0.4$	AAIJ	18H LHCb $p\bar{p}$ at 13 TeV	

$$\Gamma(\Xi_b^0 \pi^- \times B(b \rightarrow \Xi_b(6227)) / B(b \rightarrow \Xi_b^0)) / \Gamma_{\text{total}} \quad \Gamma_2 / \Gamma$$

VALUE (units 10^{-3})	DOCUMENT ID	TECN	COMMENT
28 ± 11 OUR AVERAGE	Error includes scale factor of 1.8.		
$47 \pm 10 \pm 7$	AAIJ	18H LHCb $p\bar{p}$ at 7, 8 TeV	
$22 \pm 6 \pm 3$	AAIJ	18H LHCb $p\bar{p}$ at 13 TeV	

 $\Xi_b(6227)^-$ REFERENCES

AAIJ	21 PR D103 012004	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	18H PRL 121 072002	R. Aaij <i>et al.</i>	(LHCb Collab.)

NODE=B180M

NODE=B180M

NEW

NODE=B180M;LINKAGE=C

NODE=B180M;LINKAGE=A

NODE=B180M;LINKAGE=B

NODE=B180W

NODE=B180W

NEW

NODE=B180W;LINKAGE=B

NODE=B180W;LINKAGE=A

NODE=B180215;NODE=B180

DESIG=1

DESIG=2

NODE=B180220

NODE=B180R01

NODE=B180R01

OCCUR=2

NODE=B180R02

NODE=B180R02

OCCUR=2

NODE=B180

REFID=60752

REFID=58863